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and referred to him by the Academy for that purpose. A part of the apparatus which he employed in conducting the analysis was exhibited, and the mode of operating with it fully explained.

A letter was read from Mr. Benjamin Silliman, Jr., Secretary of the Association of American Geologists and Naturalists, recently convened at New Haven, Conn., dated Yale College Cabinet, May 6th, 1845, transmitting a copy in manuscript of a Report made by a Committee of the Association, appointed for the purpose "of taking into consideration the adoption of the rules of the British Association regarding the subject of Zoological and Botanical Nomenclature, with such changes as may be deemed expedient."

The design of the Association in transmitting a copy of this Report being, to ascertain the views of the Academy on the subject referred to, in connexion with those of other scientific bodies in the United States, the documents were on motion referred to a committee, as follows: Mr. Phillips, Dr. Bridges and Dr. Morton.

A letter was read from Mr. J. D. Dana, Chairman of the committee of the Association, dated New Haven, May 6th, 1845, in relation to the same subject.

On motion of Prof. Johnson: Resolved, That the Library Committee be directed to inquire what measures can be adopted to place the Academy in possession of a copy of the highly valuable work of Mr. Audubon on the quadrupeds of the United States, now in course of publication.

Meeting for Business, May 27, 1845.

VICE PRESIDENT MORTON in the Chair.

The committee to whom was referred a communication from Mr. Edward Harris, read April 1st, 1845, on the Geology of the Upper Missouri, reported in favor of publication.

To Professor Henry D. Rogers, Samuel George Morton, M. D., and Professor Walter R. Johnson, Committee of the Academy of Natural Sciences of Philadelphia.

GENTLEMEN,—A plain statement of such facts as I have been able to collect in reference to the Geological character of the country bordering on the Missouri River, will perhaps be preferable to attempting a detailed reply to the questions proposed by your Committee to Mr. Audubon and myself on our departure for the upper waters of the Missouri in the spring of 1843. I would beg leave to remark that our opportunities for Geological research fell far short of our anticipations. The extent of our journey was unexpectedly limited to the mouth of the Yellowstone, and just before leaving that place, a diagram, which I had found of the strata in the hills rising back of Fort Union, was unfortunately destroyed when too late to replace it. The specimens taken from these strata will be found in the box which I have sent to the Academy. Our opportunities in descending the river were also far from being favorable. Frequent storms and high winds obliged us to lie by in places which we would not have chosen for any of the purposes of the expedition, so that by taking advantage of all the good weather to hasten our progress, we were only able to reach St. Louis in our Mackinaw boat on the sixty-third day from Fort Union.

In the whole course of the Missouri, from its mouth to the mouth of the Yellowstone, the strata are *horizontal*, and as we passed up the River, I noted the points at which each of the principal series was lost under the water by the rise in the bed of the stream. Thus—the lower series of secondary limestone disappears a few miles above Bellevue, and at Cabaué's Bluff, twenty miles further, a ledge of rocks crosses the river beneath the water, causing a slight rapid at a low stage water. I take this to be the last evidence of that formation. From Cabaué's Bluff to the Grand Sioux River, a distance of about 160 miles the River approaches the Bluffs in but few places, and in those places the rock, of about 60 feet in thickness, appeared to be a soft sandstone. (In no part of this formation had we an opportunity of landing to ascertain the nature of the rock, still I thought we were near enough to pronounce it sandstone.) This stratum loses itself in the River near the Grand Sioux. At this place a stratum of soft clay stone appears, which runs to within a few miles of the lower end of the Great Bend where there is another submerged ledge of rocks crossing the River. Then we have Nicollet's great bed of clay which is visible until you pass the Mandans, terminating between Beaver and Grand Rivers. Here commences what I have called the Yellowstone series, which probably continues to the great Falls of the Missouri, or until it is met by the outcropping rocks of the mountain range, if these Falls be not formed by such outcropping.

Thus we have in the ascending series—No. 1, The secondary limestone from the first Bluff on the Mississippi, above the mouth of the Ohio, to Cabaué's Bluff on the Missouri, ten or twelve miles below Old Council Bluffs. No. 2, Yellow sandstone (?) to Grand Sioux River. No. 3, Clay stone to lower end of Great Bend. No. 4, Nicollet's clay to a point between Beaver and Grand Rivers. No. 5, The Yellow stone formation. It will be perceived that the localities named as the ending of one and beginning of another series, are not in fact the beginning of the upper bed, but are the points where the superior stratum of the last series is lost sight of in the River. Hence it is evident (from the fact of the strata being perfectly horizontal) that while the lower series will never be seen higher up the River than the points indicated, the superincumbent series must have its beginning many miles lower down, according to the height of the Bluffs and the angle of descent of the stream.

Whenever we ascended the Bluffs to the High Prairies, we found them more or less covered with a Boulder drift, with frequent denuded points, leaving the larger Boulders lying upon the regular strata. As we ascended the River, the Boulders, which are much worn and rounded, increased in size (with some variations) until we reached the high hills of the *second Great Bend*, between the Mandans and the mouth of the Yellowstone, say, from the size of paving stones at Fort Croghan to rocks of several tons at the second Great Bend, after which, and at the Yellowstone, half a ton would probably be the size of the largest Boulder.

The exceptions to perfectly horizontal stratification are only found in series No. 4, and appear to have arisen from two causes—from slides of the Bluffs, and from the fact of their frequently taking fire and burning for several years, causing the Bluffs to sink and crumble down. Mr. Bell was the only one of our party who had an opportunity of witnessing the burning of the cliffs, while on a hunting excursion about 30 miles above the Yellowstone on the northern bank of the Missouri. Smoke was issuing from the summit of the cliffs under which he was riding—there was a thin seam of coal on a line with the smoking part of the cliff, but where it was burning, and where the fire appeared (by the crumbling down of the cliff) to have passed, there was no coal visible. I am inclined, from this circumstance, and from having found remains of coal in a stratum of sandstone containing impressions of leaves, and bearing evident marks of fire, to think with Lewis and Clark, that the burning of the cliffs is to be attributed to the spontaneous ignition of the coal. The soil in No. 4 and 5 is strongly impregnated with salts, apparently sulphate of magnesia (?) so that most of the brooks and springs are saliferous. In excursions on the Prairies it is difficult to find good water. Soon after rains it may be found in small basins, but these soon become brackish, unless they are in the detritus of the drift.

Series Nos. 3 and 4 appear to contain the greatest quantity of crystallized salts, such as alum, copperas and sulphate of magnesia, and saliferous springs and streams in great numbers. Warm springs are said to exist, but we did not meet with them. We found a substance like petrolium in colour and consistence, but without odour. Crystallized gypsum (? see specimens) is exceedingly abundant in No. 4, lying in thin veins, cutting the regular stratification at right angles, Fossil shells abounded most in No. 4.

In No. 5. commence the remarkable strata which form the picturesque hills noticed by travellers, and called the Mauvaises Terres by the trappers and voyageurs. The strata vary from a few inches to a few feet in depth, and from the variety of their colours, and from the singular forms and grouping of the hills into which the great Bluff of the high Prairie is gullied by the torrents of ages, they appear in many places more like the work of art than nature. They are usually called Clay hills by travellers, but repeated inspection has satisfied me that clay occcupies but a small number of the strata, at least in the vicinity of Fort Union. There are strata of sand, clay, shale, sandstone and coal alternating, but without regularity. I have frequently seen a stratum of sand completely covered by the washing from a superincumbent stratum of clay, like a coat of paint, so that its nature could only be ascertained by scraping off the thin covering of clay. I am inclined to think, however, that the proportion of clay is greater in the lower strata of this series, immediately overlying the Nicollet clay. The cause of the singular castellated appearance of these hills is the great variety of materials of which the strata are composed being acted upon in various degrees by atmospherical influences, according to their capability of resisting them ; hence the spires, pyramids, cones and other forms cut out by the torrents, are frequently capped by hard sandstone, while the stratum, immediately underlying it, may be sand or clay, which being more easily affected by the atmosphere, crumbles away and leaves the sandstone projecting, and so on with thirty or forty distinct strata of hard and soft sandstone, sand, clay, shale and coal, of very marked shades of colour, and in many places reddened by the action of fire. I should have remarked that the visible coal seams which commence in the upper part of No. 4, are most abundant soon after entering into No. 5, and become small and few in number about the Yellowstone. I counted in one place eight seams of coal between the river bank and the top of the Bluff, varying from six inches to four feet in thickness. This coal is very light, and ignites with difficulty, emitting a very unpleasant odour while burning. Fossilized wood is very abundant in No. 5 ; I saw one specimen very much flattened by the pressure of overlying strata. Small beds of limestone are found at Fort Union.

In regard to the evidences of volcanic matter overlying the stratified rocks on the borders of the Missouri, and of the existence of red pumice in such situations, I have no where been able to discover them, although I sought them diligently in my frequent excursions into the Mauvaises Terres. The red appearance of the shale and clay, and in many instances of the sandstone, is, I believe, to be attributed to the action of fire, but may be more readily accounted for from the effects of the spontaneous combustion of the coal going on at the present day, than from volcanic agency. These evidences of fire occur in so many of the strata at such different levels, that to give them the latter origin we are compelled to suppose a succession of eruptions, but in this case what has become of the tuffa and lava ? It is impossible that I could have failed in discovering some evidence of their existence. Still I do not pretend to deny that the pumice which is so frequently found floated down the Missouri, may have had its origin in these hills and may have been found there by Mr. Catlin ; (I do deny that it is the cause of the red appearance of the hills) but may it not be accounted for by the action of these spontaneous fires ? *May not pumice be found without volcanic action ?* Some of the specimens of sandstone with impressions of leaves, in the box sent to the Academy, are evidently changed in their specific gravity by the action of fire, and your Committee will be better able than myself to judge, whether an increase of the heat, short of that necessary to produce vitrification, may not have converted the mass into the red pumice of the Missouri.

In a bed of soft sandstone at the mouth of Cannon Ball River, great numbers of those singular stones are found, which give name to the stream. The following remarks from my Journal, made on the passage up the River, were fully confirmed when we stopped at the mouth of Cannon Ball River on our return. "June 6—On passsing the mouth of Cannon Ball River yesterday, we noticed a remarkable formation in this stratum" (soft sandstone) "of round masses of rock" (hard sandstone) "in the divisions of the strata, many of them apparently perfectly spherical, and from 18 to 30 inches in diameter, some as perfect as cast balls, others appear to be flattened or composed of two sections of a sphere, from a smaller ace up to a hemisphere, joined together with mathematical nicety, and surrounded by a belt or zone at the junction projecting from one to four inches, which zone lies horizontally in the line of division of two strata. I had observed traces of this peculiarity in the rock the day before, and this evening, 30 miles below the Mandans, I noticed it again. Cannon Ball River takes its name from the presence of these balls. They are said to be hollow, and to contain crystals." The last remark was not confirmed by the opening of two large specimens brought home by Mr. Audubon, which were found to be solid and of uniform texture throughout.

A somewhat analogous formation occurs in the region of the Yellowstone. It consists of a similar hard sandstone, lying also in the divisions of the strata of soft sandstone, but in form like a flattened trunk of a tree swelling out at the root, and might be taken for fossilized wood, but that it is destitute of concentric rings, and laminæ can always be traced in the direction of the longest diameter of the elliptical end, sometimes in exact correspondence with, and in other instances lying obliquely to, that diameter. I have seen them *in situ* projecting ten feet horizontally and perpendicular to the face of the cliff. I have seen others of more than twenty feet in length lying at the foot of the cliff whence they had fallen. The smaller end always exhibits the appearance of a transverse fracture with edges sharp and well defined, the larger end rounded and resembling the head of an immense bone fitted to work in a socket.

If this meagre statement of facts and the few specimens which accompany it, will serve in a small degree for the better appreciation of the Geologicial character of this interesting region, and hold out any inducement to well qualified persons to undertake its investigation, the object of the undersigned will be accomplished.

Yours Respectfully,

EDWARD HARRIS.

The Committee to whom the above paper of Mr. Harris, on certain points in the geology of the Upper Missouri, was referred, having availed themselves of additional information from that gentleman, and examined the specimens brought home by him, submitted to the Academy the following facts and inferences in the form of an appendix to his valuable communication.

Of the Red Pumice of the Missouri.

Upon the question of the origin of this singular substance, the Committee desire to express their general concurrence in the views presented in the paper of Mr. Harris. From the evidence afforded by the series of specimens it is clear that the so-called Pumice is not a true volcanic product, but is originally an argillaceous sandstone, probably a *lacustrine* deposition of a tertiary age. In its altered, cellular form, it is said to occur loose on the shore, throughout nearly the whole length of the River, as if strewed by the freshets, its specific gravity being frequently less than that of water.

The locality, where it was seen in place, is between the Beaver and Grand Rivers, above the Mandans, on the East side of the Missouri, and therefore about 200 miles below the mouth of the Yellowstone. Here the material offers the most unequivocal marks of being derived from the spontaneous combustion of a sedimentary argillo-arenaceous stratum. The rock is seen in almost every state of gradation from a stratified mass containing beautifully distinct impressions of leaves of terrestrial trees, to a light vesicular pumice. Certain half-fused specimens show indeed the well presumed traces of these leaves, the partially melted condition and the nearly perfect vesicular structure, all upon the same mass. The presence of sulphuret of iron, and of lignite, in the neighboring clays of the same group of strata, suggests a ready source for this spontaneous combustion.

This explanation of the origin of the pumice, sustained as it is by the drawings and descriptions of the scenery given by the Prince Maximilian, and borne out by the fact that no other material, of even an imputed volcanic source, has ever been discovered in the plains of the Missouri, renders it highly probable that the stratified pumice, alleged by Mr. Catlin to exist there, is derived from the same cause. We therefore come to the general conclusion, which best accords with all that is known of the topographical features of the region, that no trace of volcanic action is visible East of the Rocky Mountains.

The leaves imbedded in the stratum which produces the pumice-like material, bear a near resemblance to those of the common beach tree, (Fagus ferruginea,) they are at all events the leaves of an exogenous tree of a recent type.

Proofs of a Freshwater formation, near the Mouth of the Yellowstone River.

In the immediate vicinity of Fort Union, near the junction of the Yellowstone and Missouri Rivers, in the group of strata designated as No. 5 in Mr. Harris's paper, occur incontestible proofs of a freshwater formation. At a distance from the Fort of about half-a-mile, that gentleman had a view of the horizontal outcrop of the lands of rock through a height of about 80 feet, commencing 80 or 100 feet above the river, and terminating more than 100 feet below the general level of the rolling plains, which are here nearly 300 above the bed of the Missouri. The section which he constructed was subsequently lost. It exhibited 15 different beds of alternating soft clays, uncemented sands, and soft argillaceous sandstone.

In the upper part of this section occurs *lignite,* some of which is in the condition of a very friable charcoal.

The fourth and fifth layers in this section are especially interesting. The 4th is a bed of clay, the 5th a layer not more than one foot in thickness, of a brown ferruginous argillaceous rock. They contain three or four species of freshwater univalve shells, Lymnea, Planorbis, &c. One of the species of Planorbis it is conjectured may be a form now extinct, but the mutilated con dition of the specimens prohibits a positive opinion.

Within one mile and-a-half of the locality of the section just alluded to, there is a stratum of fine-grained argillaceous sandstone of a light-grey colour, with minute black specks. This occupies a higher level than the top of the section. The rock is exposed in a quarry through a thickness of 20 or 30 feet, whence building stone has been procured for the foundations of the fort. Like the beds previously described, this stratum furnishes proof of a freshwater origin. Among the specimens from it, is one presenting the two valves of a bivalve shell, apparently an *Anadonta?*

It also contains leaves of deciduous trees, bearing a close resemblance to those of the Beach. Besides these indications we have evidences derived from the remains of what was probably a mammiferous animal. Two fragments of bone procured at one of the above localities, indicate by their cancellated structure an animal of this type; but they were too imperfect to enable us to decide the order to which they belong.

The proofs thus afforded of a probably widely diffused freshwater formation in the region of the Upper Missouri, reposing upon the cretaceous strata, and imbedding remains of a manifestly tertiary age, are just at this time invested with considerable interest, from their according with the discoveries recently made by Captain Freemont, of the presence of other and probably extensive freshwater tertiary strata in the Oregon Territory.

All which your Committee beg leave respectfully to Report.

Henry D. Rogers,
S. G. Morton,
Walter R. Johnson.

Philadelphia, May 15th, 1845.

Description of Reptiles from South America, supposed to be New.

By Edward Hallowell, M. D.

Coluber *Spixii.*

Description.—Head elongated, large, covered above with nine plates; the rostral plate is large, pentagonal, incurvated below, the upper extremity is rounded; the anterior frontals are large, quadrangular; the posterior frontals are larger than the anterior; they are pentagonal; the vertical plate is large, pentagonal, broad anteriorly, the sides incurvated to receive the margin of the superior orbitar plates; the superior orbitar are large, pentagonal, the posterior margin the broadest; the occipital plates are large, pentagonal, and are joined anteriorly to the vertical, the supra-orbitar, and the post-ocular plate; there are two nasal plates with the nostril placed between them; there is one loral plate (♀) which is quadrangular; the anterior orbitar plate is large and also quadrangular, the upper margin broader than the inferior; there are two post-ocular plates, both of which are quadrangular; there are eight superior labial plates, the seventh and eighth the largest; the eyes are large and projecting; irides ——; body long, somewhat slender, thickest near the middle; tail long; body covered above and on the sides with large quadrangular scales, which are smooth; the scales upon the tail are also smooth, quadrangular.

Abdominal scuta 164: subcaudal 113.

Colour.—Upper part of head sea-green; this colour predominates upon the sides as far as the inferior margin of the orbit; margin of upper jaw straw colour; upper part and sides of body and tail also sea-green; the chin, throa, and under part of body and tail are straw colour.

Dimensions.

		Feet.	*Inches.*
Length of head,	- - -	0	$1\frac{5}{8}$
Greatest breadth,	- - -	0	$\frac{3}{4}$
Length of body,	- - -	3	11
Length of tail,	- - -	1	7

Coluber *fuscus.*

Description.—Head of moderate size, elongated, covered above with nine plates; the rostral plate is hexagonal, rounded above; the anterior frontals are of moderate size, pentagonal; the posterior frontals are larger than the anterior, pentagonal; the vertical plate is long, pentagonal, broad anteriorly; the superior orbitals are quadrangular, the posterior margin somewhat rounded; the occipital plates are large, pentagonal, they are joined anteriorly to the vertical, the supra-orbitar, and the upper post-ocular plate; there are two nasal plates, which are rather large, with the nostril placed between them; there is one antocular and two post-ocular plates; the anterior is larger than either of the posterior, its anterior margin the broadest; there is one loral plate, which is long and quadrangular; the eye is large and projecting; irides ——; there are nine superior labial plates, the seventh and the eighth are the largest; the neck is slender; the body is long and also slender, thickest at the middle; the tail is long and tapering; the scales upon the tail and body are smooth and quadrangular.

Abdominal scuta 190: subcaudal 115.

Colour.—Head above and upon the sides, as far as the superior margin of the orbit, of a dark brown colour; the upper part and sides of the body are also brown; the chin, the throat, and under part of the tail, are straw colour.

Dimensions.

		Feet.	*Inches.*	*Lines.*
Length of head,	- - -	0	1	0
Greatest breadth,	- - -	0	0	10
Length of body,	- - -	2	6	0
Length of tail,	- - -	0	13	0

Coluber *Pickeringii.*

Description.—Head large, rounded posteriorly, covered above with nine plates; the rostral plate is large, hexagonal, curved inferiorly; the anterior frontals are large and pentagonal; the posterior frontals are hexagonal, larger than the anterior; there are two nasal plates, with the nostril placed within them; the vertical plate is large, broad anteriorly, incurvated at the sides, where it receives the internal margin of the superior orbitar plate; the occipital plates are large, pentagonal, they are joined anteriorly to the vertical, the supraorbitar, and the upper post-ocular plate; there is but one ant-ocular plate; there is one loral plate, which is quadrangular; there are two post-ocular plates, which are also quadrangular; the eye is large and projecting; there are nine superior labial plates, the seventh and eighth the largest; the neck is slender; the body is long, thickest at the middle; the tail is long and tapering; the scales upon the tail and body are quadrangular,

Colour.—Head, body and tail, are of a sea-green colour; upper and lower jaw, chin, throat, abdomen, and under part of tail, straw colour.

Abdominal scuta 160: subcaudal 128.

Dimensions.

		Feet.	*Inches.*
Length of head,	- - -	0	1½
Greatest breadth,	- - -	0	1
Length of body,	- - -	4	10
Length of tail,	- - -	2	1 ?

Coluber *vittatus.*

Description.—Head of moderate size, depressed, covered with nine plates; the rostral plate is hexagonal, incurvated below; the anterior frontals are small and quadrangular; the posterior are larger than the anterior, they are pentagonal; the vertical plate is of moderate size, it is hexagonal, and broader anteriorly; there is but one nasal plate; the nostril is placed near its anterior margin; there is a loral plate, which is quadrangular; there are two post-ocular and one ant-ocular plate, which is pentagonal; the supra-orbitar plate is pentagonal, the inferior margin being curved to receive the upper margin of the eye; the occipital plates are pentagonal, larger than the other plates; the eyes are of moderate size and projecting; there are eight superior labial plates, the sixth and seventh are the largest; the neck is slender; the body of moderate size; the tail is short and tapering; the body and tail are covered with smooth quadrangular scales.

Colour.—Head above and upon the sides, as far as the inferior margin of the orbit, black; irides ——; body black above, the cuticle being removed, ash-coloured upon the sides; there are two white vittæ, extending, one on each side of the body and tail, as far as the extremity of the latter; a row of minute white spots extends along the sides of the neck and anterior half of the body, more indistinct in the former; there is also upon the sides of the neck a row of dark coloured spots, more or less oval; under surface of chin, throat, abdomen and tail, of a light straw colour.

Abdominal scuta 156: subcaudal 36.

Dimensions.

	Feet.	*Inches.*
Length of head, - - -	0	$\frac{5}{8}$
Greatest breadth, - - -	0	$\frac{7}{16}$
Length of body, - - -	1	5
Length of tail, - - -	0	5

COLUBER *fuliginosus.*

Description.—Head small, depressed, covered like the rest of this genus with nine plates; the rostral plate is of moderate size, incurvated below, rounded superiorly; there are two anterior and two posterior frontal plates, the former are quite small, the latter much the larger, they are quadrangular; the vertical plate is small, hexagonal, broadest in front, more extended in the lateral than the longitudinal direction; there are two occipital plates, which are larger than either of the others; the supra-orbitar plates are quadrangular; there are two posterior orbitar plates, and there is no ant-ocular plate; the loral plate extends backwards as far as the eye; there are two nasal plates, with the nostril placed between them; there are six superior labial plates, the sixth is the largest; the eyes are small and slightly projecting; the neck is slender; the body of moderate size, covered with smooth quadrangular scales; the tail is tapering.

Colour.—Body and tail dark brown; upper part of head and sides brown as far as the inferior margin of the orbit; irides ——; upper jaw, chin, throat, under parts of abdomen and tail, light straw colour—the latter mottled with brown.

Abdominal scuta 158: subcaudal 28.

This species very much resembles the C. *fuscus*, for the young of which it might be taken; it differs from it, however, in the form of the head, which is much more depressed, and in the arrangement and form of its plates; the tail also is much shorter.

Dimensions.

	Feet.	Inches.
Length of head, - - -	0	$\frac{1}{2}$
Greatest breadth, - - -	0	$\frac{3}{3}$
Length of body, - - -	1	2
Length of tail, - - -	0	$1\frac{3}{4}$

Coluber *Ashmeadii.*

Description.—Head of moderate size, covered above with nine plates, of these the occipital are the largest, they are pentagonal; the vertical plate is hexagonal; it is joined anteriorly to the posterior frontal and to the ant-ocular plates, posteriorly it is connected with the occipital; its sides are incurvated to receive the supra-orbital plates; the supra-orbitar plates are pentagonal, they are joined superiorly to the vertical; the external margin is incurvated to form the upper portion of the orbit; there is one ant-ocular and two post-ocular plates; the posterior frontals are large and pentagonal; tho anterior are smaller in size and quadrilateral; there are two nasal plates, with the nostril placed between them; there are eight superior labials, of these the seventh is the largest; the eye is of moderate size and somewhat projecting; the neck, and posterior part of the body, is slender; the body is much thicker in the middle; tail rather long and tapering.

Colour.—Head of a brownish-ash colour above and upon the sides; body ash coloured; a series of scars or blotches, of a darker colour than the rest of the body, extend from the neck to near the extremity of the tail, these are bordered with white; there is a dark coloured vitta extending from the posterior part of the eye to the posterior extremity of the upper jaw; a dark coloured blotch is observed extending from the occiput along the upper part of the neck, on each side, a short distance; the chin, throat, abdomen, and under part of tail are of a light straw colour.

Abdominal scuta 191: subcaudal 113.

This species I have named after my friend Mr. Samuel Ashmead, to whose kindness I am indebted for the opportunity of describing all the species contained in this paper.

Dimensions.

	Feet.	Inches.
Length of head, - - -	0	$\frac{3}{4}$
Greatest breadth, - - -	0	$\frac{1}{2}$
Length of body, - - -	1	$\frac{1}{2}$
Length of tail, - - -	0	$5\frac{1}{4}$

Coluber *variegatus.*

Description.—Head of moderate size, flattened above, compressed laterally, covered with nine plates; of these the occipital are pentangular; the vertical is small and hexagonal, it is joined anteriorly to the posterior frontals, laterally to the supra-orbitar, and posteriorly to the occipital plate; the supra-orbitar are pentagonal, broadest posteriorly; the posterior frontals are large and quadrangular; the anterior frontals are much smaller than the posterior, they are pentagonal; the supra-orbitar plates are hexagonal; there are seven or eight superior labials, of these the sixth is the largest; the eyes are very large and projecting; there is one anterior orbitar plate, which is quadrangular, and extends from the eye to the nasal plate; there are two nasal plates, with the nostril placed between them, which is small; the neck and body are slender, thickest near the middle, and very much compressed; the tail is of moderate length and tapering; the body and tail are covered above and upon the sides with smooth quadrangular scales.

Abdominal scuta 178: subcaudal 96.

Colour.—Predominating colour of head, body and tail, brownish mingled with ash; a series of transverse bands or fasciæ, of a brown colour, margined with white, extend across the body and tail from the neck to the extremity of the latter; those upon the body are separated from each other by intervening spaces on the upper half, about half an inch in length; under surface of chin, throat, abdomen and tail, of a straw colour, with a row of brownish spots running along the centre of the latter; they exist also, but are indistinct, upon the neck; the brownish transverse bands, above described, extend a short distance upon the abdomen; those on the lower half nearly meet; those on the tail meet in the centre.

Dimensions.

	Feet.	*Inches.*
Length of head,	0	½
Greatest breadth,	0	$\frac{5}{6}$
Length of body,	1	1
Length of tail,	0	4½

COLUBER *atratus.*

Description.—Head small, depressed, covered above with nine plates; the rostral plate is hexagonal, incurvated beneath; the anterior frontals are quadrangular, the vertical small and hexagonal; the occipital plates are pentagonal; there is a small quadrangular plate extending from the eye to the nasal plate; the eye is small; the irides ——; there are six plates upon the margin of the upper jaw, of these the fourth is the largest; the body is long and slender, covered with small, quadrangular, carinated scales; the tail is short and tapering.

Abdominal scuta 145: subcaudal 46.

Colour.—A whitish band extends across the occiput; upper part of body and tail slate colour; chin, throat, abdomen and tail, of a straw colour.

Dimensions.

	Inches.
Length of the head,	⅜
Greatest breadth,	¼
Length of body,	10¼
Length of tail,	2¼

This species resembles very much our C. *punctatus*, but wants the spots upon the abdomen. The latter, however, are occasionally absent in the *punctatus ;* it may, therefore, notwithstanding the remoteness of its habitat, very possibly be the same species. It would appear to be common, four specimens having been observed in the collection.

TRIGONOCEPHALUS *Colombiensis.*

Description.—Head of moderate size, triangular, presenting two small plates in front, and a row of smaller scales immediately behind; the rest of the upper portion of the head is covered with small polygonal scales, those in front of the supra-orbitar ridges are somewhat larger than the others; the rostral plate is large and hexagonal; the nostril is of moderate size; there is a deep fossa between the eye and the nostril; the eyes are oval, rather large, and projecting; the supra-orbitar ridges are very prominent; there are seven superior labial plates, of these the fifth is the largest, it is pentagonal; the neck is slender; the body is triangular, thickest at the middle; the tail is short, and tapering to a point; the plates upon the under part of the tail are bifid; the body is covered above and upon the sides with quadrangular carinated scales.

Abdominal scuta 207: subcaudal 70.

Colour.—Superior part of head, body and tail, of a light yellowish ash-colour; upon each side of the body is a row of blotches, triangular in shape, of a darker colour than the rest of the body, approaching to olive; the intervening spaces present numerous spots of the same colour; there is a row of dark coloured spots extending along each side of the abdomen ; under surface of throat, abdomen and tail, are straw colour.

Dimensions.

	Feet.	*Inches.*
Length of head, - - -	0	$\frac{7}{8}$
Greatest breadth, - - -	0	$\frac{1}{2}$
Length of body, - - -	1	$5\frac{1}{4}$
Length of tail, - - -	0	$2\frac{1}{8}$

This species resembles very much the Trigonocephalus *lanceolatus*, Oppel. or *Vipere jaune* of the French, but differs from it in its habitat, (the latter being found in Martinique,) and in the number of its plates. In the *lanceolatus* there are 225 to 228 plates upon the abdomen, and from 59 to 61 upon the tail.

LEIOLEPIS *Auduboni.*

Description.—Head pyramidal, covered above with numerous polygonal scales; those upon the front of the head are much the largest; they are seventeen or eighteen in number; the rostral plate is pentagonal; the frontal plates are quadrangular; the nasal plates are large and pentagonal; the nostrils are large and directed forwards; there is a small quadrangular plate between the nasal and the frontal plate; there are five plates along the margin of the upper jaw, they are oblong, quadrilateral; the eyes are oval; the eyelids are covered with numerous small granules; the tympanum is circular and placed a little below the surrounding surface; the extremities are of moderate size, the anterior reach as far as the extremity of the snout; the form of the body is slender, and compressed; it is covered with scales, which vary according to their situation—in the back they are hexagonal and carinated, in the sides they are more or less circular, with indistinct carinæ, in the abdomen they are quadrangular, and strongly carinated; the tail is more than twice the length of the body, it is covered with carinated scales.

Colour.—The head and upper parts of body are of a brownish chocolate colour, variegated with spots of green and yellow; tail chocolate colour; under surface of chin, throat, abdomen and extremities, straw colour, with numerous dark coloured spots.

Dimensions.

	Inches.
Length of head, - - - -	1⅛
Greatest breadth, - - -	¾
Length of body, - - - -	4
Length of tail, - - - -	11¼

The specimens above described were found in the Republic of Columbia, within two hundred miles of Caraccas. As far as I have been able to ascertain they are new, with the exception of the Coluber *atratus*, and the Trigonocephalus *Colombiensis*, both of which are somewhat doubtful; the latter resembles very much the plate of the *lanceolatus*, as given in the Regne Animal of Cuvier, except that the triangular spots upon the sides meet upon the back, whereas, in our specimens—of which there were two—they are distinct. It differs from it also, as above stated, in the number of the abdominal and subcaudal plates. Among them was a specimen of the Ampleistana *fuliginosa*. They were all preserved in spirits.

Descriptions of New Species of African Reptiles.

By Edward Hallowell, M. D.

Calotes *versicolor.*

Description.—Head pyramido-quadrangular, longer by one-third in the antero-posterior direction than it is broad posteriorly; its upper surface is covered with polygonal scales of nearly uniform size, carinated for the most part; occipital scale large, hexagonal; the region in front of the eyes is convex; in its centre are two scales strongly carinated; the posterior or superior one is pentagonal; the inferior, which is the longest, is quadrilateral; supra-orbitar regions very convex, leaving a marked depression between them; nostrils large, situated near the posterior margin of a large triangular and strongly carinated scale; rostral plate of moderate size, hexagonal, smaller than upon the chin, which is triangulo-pentagonal; immediately behind it are six or seven small imbricated and carinated scales; there are eighteen or twenty oblong quadrilateral labial plates in each jaw; eyes of moderate size, lids covered with numerous small and whitish granules, which are smooth; auditory foramen large; the tympanum is situated at some distance within its orifice, which presents upon its superior and lateral margins a series of small and pointed spires; a row of pointed spires is observed behind the ear, commencing at the angle of the lower jaw, and extending a short distance upon the sides of the neck; besides this row, which is well defined, there are several smaller rows and clusters of spires upon the sides of the neck and posterior parts of the occiput; the tongue is triangular, slightly bifid in front, deeply notched behind—it is covered with numerous pointed papillæ posteriorly, smooth in front; there are three incisors and two canine teeth in the upper jaw; these are separated from each other by a wide interval; in the lower jaw there are two small incisors, having on each side two canine teeth placed obliquely; there are seventeen teeth on each side of the lower and as many in the upper jaw; there are two folds under the neck, the anterior is much larger than the posterior, and represents a V in its middle, there is also a fold upon its side; upon the back of the neck is a small crest, extending from the occiput as far as the shoulders; the posterior part of the head is covered with numerous hexagonal imbricated and carinated scales of nearly equal size; neck, body, and upper surface of extremities and tail covered with quadrangular, imbricated, and strongly carinated scales; the carinæ extend the whole length of the scale, each terminating in a sharp point; the points of those upon the neck and occiput are directed forwards; those upon the body and extremities are directed backwards; the scales upon the body are arranged in oblique rows, the fine edge of the scale looking upwards and backwards; scales upon the chin, abdomen, and under surface of extremities, smooth; there are no femoral pores; a series of pores in front of the anus; tail conical, large at its base, covered with imbricated and carinated scales, much larger than upon the body, each ending in a point.

Colour.—Head, chin, throat, and under surface of abdomen and extremities, of a light olive colour; body, upper surface of extremities and tail, presenting generally a tinge of green mingled with olive.

Dimensions.

	Inches.	*Lines.*
Length of head, - - -	1 (Fr.)	0
Length of anterior extremities, - -	0	18
Length of posterior extremities, - -	2	4
Length of neck and body, - -	2	10
Length of tail, - - -	17	4

Habitat.—Liberia, West Africa.

This specimen, with a number of others, were sent to me by the Rev. James Matthias, formerly Governor of Liberia; they are said to exist in considerable numbers in the vicinity of the different settlements, and are highly prized by the natives as an article of food.

RANA *Bibronii.*

Description.—Head large, triangular, slightly convex above, truncated anteriorly, nostrils distinct, situated nearer the snout than the orbit; tympanum very distinct, circular, of a bronze colour, with a dark point in the centre; eyes very large, not remarkably prominent; tongue large, cordiform, notched posteriorly, having a slight indentation at its point; opening of the mouth large; teeth in the upper jaw numerous, very fine pointed, of nearly equal size; those of the palate seven or eight in number on each side, situated on a line with the anterior margin of the posterior nares; posterior nares large; eustachian foramina very distinct; body slender, extremities idem; web of the toes extending as far as the distal extremity of the antepenultimate phalanx, except of the fourth, which are much larger than the third and fifth, the latter are of nearly equal length; subarticular tubercles distinct; skin smooth, thrown into numerous longitudinal folds upon the back; no glands or pores are observed in any part of the body.

Colour.—Body above grayish, with numerous dark coloured blotches upon the head and back; a band of white extends from the tip of the snout to the extremity of the body; along the sacrum this band is very narrow, upon the body and head it is much broader, occupying in the latter situation the whole of the space between the orbits; throat, chin, and under parts of body, white.

Habitat.—Liberia, West Africa.

Dimensions.

	Inches.	*Lines.*
Length of head, - - -	0	7½
Breadth, - - - -	0	7
Length of body, - - -	1	4
Length of anterior extremities, -	1	1
Length of posterior extremities, -	3	5

PYTHON *Liberiensis.*

Description.—Head large, triangular, covered anteriorly with plates, which extend to some distance behind the eyes; the rostral plate is pentagonal; there are two anterior and two posterior frontal plates; the former are elongated and quadrilateral; the latter are large and also quadrilateral; there are eight circumorbitar plates, of these the two superior? are much the largest; the eyes are large and projecting; there are thirteen superior labial plates, of these the seventh on one side, and the eighth on the other are the largest; the nostril is small, and placed near the upper margin of a large triangular plate; between this and the circumorbitar plate is a number of small polygonal scales; upon the upper part of the head, at its centre, between the two large supra-orbitar plates, are two hexagonal plates; in front and posterior to them, are a number of polygonal scales varying in size; the posterior are the largest; the body and tail are covered with smooth quadrangular scales.

Colour.—Head brownish above and upon the sides; a yellow band extends from the snout to the posterior extremity of the upper jaw, passing immediately over the orbit; this is continuous with one which passes across the angle of the mouth and terminates in front of the orbit; the body is brownish, variegated with yellow; these markings form a beautiful robe, but have no determinate forms; upon the sides of the body is a series of dark colored blotches margined posteriorly with yellow; under surface of abdomen and tail straw colour, clouded with numerous dark coloured spots, larger upon the tail.

Dimensions.

	Feet.	*Inches.*
Length of head - - -	0	1¼
Greatest breadth, - - -	0	⅝
Length of body, - - -	1	11½
Length of tail, - - -	0	3½

For the opportunity of describing this and the preceding species, I am indebted to the kindness of my friend Dr. Blanding, whose services in the illustration of the Zoology of this country and of Africa are well known. The specimens were preserved in spirits, and the colours have no doubt more or less changed. Among them was a horned snake, which appears to be the COLUBER *nasicornis* of Shaw, but his description is imperfect, and his figures incorrect; I would propose for it the name of ARASTES *nasicornis*.

The Monthly Report of the Corresponding Secretary was read and adopted.

ELECTION.

William Rich, Esq., Botanist to the U. S. Exploring Expedition, was elected a Correspondent of the Academy.